NETSTREAMS®

MUSICA™

NS-MU5066 Audio Distribution System

Integration & Design Guide

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The IP-Based Distributed Entertainment Company.

THIS DOCUMENT WAS WRITTEN BY THE TECHNICAL SERVICES DEPARTMENT AT:

This document will explain how to connect and control the Musica™ MU5066 professional audio distribution system from an external control system.

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INTRODUCTION

NetStreams® Musica™ NS-MU5066 is a multi-source multi-zone audio distribution system that may be integrated to work with external control systems and servers. This can be accomplished via direct control through the RS-232 port on the rear of the *Musica* preamp or by means of infrared commands issued by the controlling system to the IR receivers built into the *Musica* keypads. The IR commands can be issued from the controlling system via its own remote control or an IR flasher placed in the room used to trigger the *Musica* keypad via its IR receiver may issue them.

The most common way for these controllers and servers to control the audio system would be through the use of the one-way infrared control commands. These commands can be taught to other controllers and used to create and extended remote control scenarios.

The remote control supplied with the *Musica* system can also provide a way to teach these commands into a learning universal remote such as the Philips Pronto. These commands can also be taught to the learning devices for control systems such as the CRESTRON CNXLIR or the AMX IRIS.

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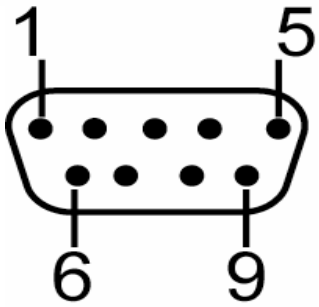
SERIAL PORT PARAMETERS AND PIN-OUT

Command Standard:	RS-232c
Baud Rate:	9600
Data Bits:	8
Stop Bits:	1
Parity:	N
Pacing:	None
Hardware Handshaking:	None
Software Handshaking:	None



SERIAL PINOUT

PIN	FUNCTION	ABBREVIATION
1	NOT USED	
2	Received Data	RD / RX / RXD
3	Transmitted Data	TD / TX / TXD
4	NOT USED	
5	Signal Ground	GND
6	NOT USED	
7	NOT USED	
8	NOT USED	
9	NOT USED	

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IR CODES

Command	5066	KL100	DATA
ON	POWER ON		0FH
OFF	POWER OFF	* (POWER OFF)	ODH
MUTE TOGGLE	MUTE		14H
SOURCE RING	SOURCE		05H
BACK LIGHT C1	C1		OBH
BACK LIGHT C2	C2		17B
MENU TOGGLE	MENU		07H
PAUSE	#1		08H
STOP	#9		04H
PLAY	#2	PLAY/STOP (#2)	0CH
REW	#3 (SHUFFLE)		02H
UP ARROW			0AH
FFW	#4 (REPEAT)		06H
LEFT ARROW	#7		0EH
DOWN ARROW	“#”		01H
RIGHT ARROW	#8		09H
PREV	#5	Transport Left (#5)	03H
NEXT	#6	Transport Right (#6)	1DH
SOURCE POWER	* (MODE)		00H
VOLUME (MENU) UP	UP	UP	1CH
VOLUME (MENU) DN	DOWN	DOWN	12H
VOLUME (MENU) L	MACRO 1		18H
VOLUME (MENU) R	MACRO 2		10H
SOURCE 1	SWITCH	S1 (ON)	21H
SOURCE 2	SWITCH	S2 (ON)	22H
SOURCE 3	SWITCH	S3 (ON)	23H
SOURCE 4	SWITCH	S4 (ON)	24H
EXT (EIM)	SWITCH		2EH
FM TUNER	SWITCH		2FH

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RS232c CONTROL

The protocol described in this document provides the following commands, which are described in detail below:

- **Status(Stat) –**Doorbell(Door), Phone, Switched Outlet(SwOu), Version(Ver), IR Frequency(IRFreq) & (IRFreqExt), MacroIndex, Tuning Mode(Mode), Tuner Frequency(Freq)
- **State –** Version, Source, Source name, IR Frequency, EXT IR Frequency, Macro Index, Backlight Color, Backlight Brightness, Amplifier Output, Speaker Impedance, Door, Phone, Source Control (SwOu), Volume, Balance, Mute, Loudness, 3D Sound, Equalizer, Preset names, Tuner Frequency, Tuning Mode, Preset, Spacing, Threshold Sensitivity, Pre Emphasis, Reception, Preset Frequency.
- **Change –** Amp, Balance(Bal), Backlight Color(BaCo), Backlight Level(BaLi), Doorbell(Door), Loud, Phone, mute, Switched Outlet(SwOu), Source(Src), Store, IRFreQ, IRFreqExt, MacroIndex, Volume(Vol), and tuner commands Pre, Mode, Freq, StoreTuner.
- **Chang -** Source, Source name, IR Frequency, EXT IR Frequency, Macro Index, Backlight Color, Backlight Brightness, Amplifier Output, Speaker Impedance, Door, Phone, Source Control (SwOu), Volume, Balance, Mute, Loudness, 3D Sound, Equalizer, Preset names, Tuning, Tuner Frequency, Tuning Mode, Preset, Spacing, Threshold Sensitivity, Pre Emphasis, Reception, Preset Frequency.
- **Nudge –** Single adjustments in one direction, Balance(f), Backlight Level(l), Loud, Source, Tune, Mode, and Volume(v), Source, Source name, IR Frequency, EXT IR Frequency, Macro Index, Backlight Color, Backlight Brightness, Amplifier Output, Speaker Impedance, Door, Phone, Source Control (SwOu), Volume, Balance, Mute, Loudness, 3D Sound, Equalizer, Preset names, Tuning, Tuner Frequency, Tuning Mode, Preset, Spacing, Threshold Sensitivity, Pre Emphasis, Reception, Preset Frequency.
- **Execute(Exe) –** The selected keypad button action Press, Hold, Menu, Lock, and Tuner preset memory(Pre)
- **IR-** Allows uploading and Downloading of IR commands
- **AllOff –** All zones off command
- **ALLON –** All zones on command (Turns all zones on to last known state. If you need to turn on all zone to a known source use the ChangeSrc command to turn on all zones.
- **Event –** These commands control the unsolicited data subscriptions; Source(Src), Source Name(Store), Button Press(Press), Room Data(Data), Tuner Status(Tuner), and Tuner Preset Names(StoreTuner)

The system will send unsolicited data after any changes in the system are made. Input lines are to be terminated with a CR or a CR/LF combination.

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COMMAND PARAMETERS AND RANGES

The following parameter types are used in the command table below. Parameters are entered and returned as ASCII strings.

Parameter	Description
Z	Zone number. Range is 0-6. The 0 parameter is for all zones.
S	Source. 0 = Off. 1 to 4 = source, E=Ext, F=Tuner
V	Volume 0 - 35
X	Logic Level Parameter. Values are 0=Off, and 1=On. (Loudness use the X parameter in 2.0)
D	Direction to ramp. 0=down, 1=up
P	Page Group to enable/disable.
C	Registered Source Command
F	Balance 1- 15
R	Source Names 1-41 (see list page 10)
L	Brightness Level 1-15
A	Internal Amp = 0, Int+Ext=1, Ext Variable=2, Ext Fixed=3
E	Enable =1/ Disable =0

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NS-MU5066 COMMAND SET

All Commands are sent and received as ASCII characters.

1st	2rd	Action	Param (s)	Sent Command	1st Results	2nd Results (Event)
Stat	Door	StatDoor		StatDoor	StatDoor/0	
	Phone	StatPhone		StatPhone	StatPhone/0	
	SwOu	StatSwOu		StatSwOu	StatSwOu/1	
	Ver	StatVer	Z	StatVer/0	StatVer/0/M50301	
	IRFreq	StatIRFreq	S	StatIRFreq/1	StatIRFreq/1/38	
	IRFreqExt	StatIRFreqExt	Z	StatIRFreqExt/1	StatIRFreqExt/1/38	
	Mode	StatMode	Z	StatMode/1	StatMode/1/0	
	Freq	StatFreq	Z	StatFreq/1	StatFreq/1/8810	
Change	Src	ChangeSrc	Z/S	ChangeSrc/1/2	ChangeSrc/1/2	EventSrc…
	Store	ChangeStore	S/O	ChangeStore/1/2	ChangeStore/1/2	EventStore…
	Vol	ChangeVol	Z/V	ChangeVol/1/20	ChangeVol/1/20	EventData…
	Mute	ChangeMute	Z/M	ChangeMute/1/0	ChangeMute/1/0	EventData…
	Bass	ChangeBass	Z/B	ChangeBass/1/15	ChangeBass/1/15	EventData…
	Treb	ChangeTreb	Z/T	ChangeTreb/1/15	ChangeTreb/1/15	EventData…
	Bal	ChangeBal	Z/B	ChangeBal/1/7	ChangeBal/1/7	EventData…
	Loud	ChangeLoud	Z/L	ChangeLoud/1/1	ChangeLoud/1/1	EventData…
	Amp	ChangeAmp	Z/A	ChangeAmp/1/0	ChangeAmp/1/0	EventData…
	BaCo	ChangeBaCo	Z/B	ChangeBaCo/1/0	ChangeBaCo/1/0	EventData…
	BaLi	ChangeBaLi	Z/B	ChangeBaLi/1/0	ChangeBaLi/1/0	EventData…
	Door	ChangeDoor	D	ChangeDoor/1	ChangeDoor/1	EventData…
	Phone	ChangePhone	P	ChangePhone/1	ChangePhone/1	EventData…
	SwOu	ChangeSwOu	O	ChangeSwOu/0	ChangeSwOu/0	
	IRFreq	ChangeIRFreq	S/F	ChangeIRFreq/1/1	ChangeIRFreq/1/1	
	IRFreqExt	ChangeIRFreqExt	Z/F	ChangeIRFreqExt/1/1	ChangeIRFreqExt/1/1	
	Pre	ChangePre	Z/P	ChangePre/1/2	ChangePre/1/2	EventTuner…
	Mode	ChangeMode	Z/M	ChangeMode/1/1	ChangeMode/1/1	EventTuner…
	Freq	ChangeFreq	Z/F	ChangeFreq/1/8810	ChangeFreq/1/8810	EventTuner…
	StoreTuner	ChangeStoreTuner	Z/P/O	ChangeStoreTuner/1/1/2	ChangeStoreTuner/1/1/2	EventStoreTuner…
Nudge	Src	NudgeSrc	Z/D	NudgeSrc/1/1	NudgeSrc/1/1	EventSrc…
	Vol	NudgeVol	Z/D	NudgeVol/1/1	NudgeVol/1/1	EventData…
	Bass	NudgeBass	Z/D	NudgeBass/1/1	NudgeBass/1/1	EventData…
	Treb	NudgeTreb	Z/D	NudgeTreb/1/1	NudgeTreb/1/1	EventData…
	Bal	NudgeBal	Z/D	NudgeBal/1/1	NudgeBal/1/1	EventData…
	BaLi	NudgeBaLi	Z/D	NudgeBaLi/1/1	NudgeBaLi/1/1	EventData…
	Tune	NudgeTune	Z/D	NudgeTune/1/1	NudgeTune/1/1	EventTuner…
	Mode	NudgeMode	Z/D	NudgeMode/1/1	NudgeMode/1/1	EventTuner…

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NS-MU5066 COMMAND SET

1st	2rd	Action	Param (s)	Sent Command	1st Results	2nd Results (Event)
All	Off	AllOff		AllOff	AllOff	EventSrc…
	_1	All_1	-		All_1	EventSrc…
	On	AllOn	-			EventSrc…
Exe	Press	ExePress	S/K	ExePress/1/1	EventPress/1/1	
	Hold	ExeHold	S/K	ExeHold/1/1	EventPress/1/13	
	Menu	ExeMenu	Z/M	ExeMenu/1/1	-	-
	Lock	ExeLock	Z/E	ExeLock/1/1	ExeLock/1/1	EventData…
	Pre	ExePre	Z/P	ExePre/1/1	ExePre/1/1	EventTuner…
Event	Src	EventSrc	E	EventSrc/1	EventSrc/X/X/1/X/4/0	EventSrc…
	Press	EventPress	-		EventPress/2/1/0	EventPress…
	Store	EventStore	Z/E	EventSotre/1/1	EventStore/1/1/2/3/4	EventStore…
	Data	EventData	Z/E	EventData/1/1	EventData/1/10/8/8/8/1/0/1/7/1/0/0/0	EventData…
	Tuner	EventTuner	E	EventTuner/1	EventTuner/1/8810/0/1/1	EventTuner…
	StoreTuner	EventStoreTuner	Z/E	EventStoreTuner/1/1	EventStoreTuner/1/41/41/41/41/41/41/41/41	EventStoreTuner…
IR_	Dn	IR_Dn	S/K	IR_Dn/1/0	IR_Dn/1/0/12/1/4/0/3/X/1/1/X/1/1/0/1	
				IR_Dn/1/4	IR_Dn/1/4/160/1/2/3/……/159/160	
	Up	IR_Up	S/K/L/D1/ …/D(L)	IR_Up/1/0/12/1/4/0/3/X/1/1/X/X/X/X/X	IR_Up/1/0	
				IR_Up/1/4/160/1/2/……/159/160	IR_Up/1/4	

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NS-MU5066 COMMAND SET

Command	Sub_Command			Parameters				Send Command	
	Attribute	Description	Code	Zone(Z)	Value name(Initial)	Value	Dir(D)	State	Chang
State Chang Nudge	**Version**	Version(Ver)	01	0,1-6				State/01/Z	---
	Source	Source(Src)	11	0-6	Source No.(S)	0,1-4,E,F,N	0,1	State/11/Z	Chang/11/Z/S
		SourceName(Store)	12	0-6	Source No.(S) Name No.(N)	1-4,E,R 1-52	0,1	State/12/Z/S	Chang/12/Z/S/N
		IRFrequency(IR Freq)	13		Source No.(S) IR frequency (kHz)(I)	0,1-4 0,1	0,1	State/13/S	Chang/13/S/I
		IRFrequencyExt(IRFreqExt)	14	0-6	IR frequency (kHz)(I)	0,1	0,1	State/14/Z	Chang/14/Z/I
		MacroIndex	15		Source No.(S) Key No.(K) Macro index No.(M)	1-4 1-12 0-4	0,1	State/15/S/K	Chang/15/S/K/M
	Status	BacklightColor(BaCo)	21	0-6	Color No.(C)	0,1	0,1	State/21/Z	Chang/21/Z/C
		BacklightBright(BaLi)	22	0-6	Bright No.(B)	0-8	0,1	State/22/Z	Chang/22/Z/B
		AmpOut(Amp)	23	0-6	Amp No.(A)	0-3	0,1	State/23/Z	Chang/23/Z/A
		Speaker	24	0-6	Speaker No.(S)	0-2	0,1	State/24/Z	Chang/24/Z/S
		Door	25		On/Off(O)	0,1	0,1	State/25	Chang/25/O
		Phone	26		On/Off(O)	0,1	0,1	State/26	Chang/26/O
		SwitchOutlet(SwOu)	27		On/Off(O)	0,1	0,1	State/27	Chang/27/O
	Sound	Volume(Vol)	31	0-6	Volume No.(V)	0-35	0,1	State/31/Z	Chang/31/Z/V
		Balance(Bal)	32	0-6	Balance No.(B)	1-15	0,1	State/32/Z	Chang/32/Z/B
		Mute	33	0-6	On/Off(O)	0,1	0,1	State/33/Z	Chang/33/Z/O
		Loudness	34	0-6	On/Off(O)	0,1	0,1	State/34/Z	Chang/34/Z/O
		3D Effect	35	0-6	On/Off(O)	0,1	0,1	State/35/Z	Chang/35/Z/O
		Equalizer	36	0-6	Band No.(B) Value No.(V)	1-5 1-25	0,1	State/36/Z/B	Chang/36/Z/B/V
	Tuner	PresetName(StoreTuner)	41	0-6	Preset No.(P) Name No.(N)	1-8 1-52	0,1	State/41/Z/P	Chang/41/Z/P/N
		Frequency(Freq)	42	0-6	Frequency (10kHz) (F)	8810-10790	0,1	State/42/Z	Chang/42/Z/F
		Tuning Mode	43	0-6	Tuning Mode No.(M)	0-3	0,1	State/43/Z	Chang/43/Z/M

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		Preset(Pre)	44	0-6	Preset No.(P)	1-8	0,1	State/44/Z	Chang/44/Z/P
		Tuning	45	0-6	Direction No.(D)	0,1,2	0,1	---	Chang/45/Z/D
		Spacing	46	0-6	Spacing No.(S)	0-2	0,1	State/46/Z	Chang/46/Z/S
		Threshold Sensitivity	47	0-6	Sensitivity No.(S)	0-2	0,1	State/47/Z	Chang/47/Z/S
		Emphasis	48	0-6	Emphasis No.(E)	0,1	0,1	State/48/Z	Chang/48/Z/E
		Reception	49	0-6	Frequency (10kHz) (F)	8810-10790	0,1	State/49/Z	Chang/49/Z/F
		Preset Frequency	4A	0-6	Preset No.(P) Frequency (10kHz) (F)	1-8 8810-10790		State/4A/Z/P	Chang/4A/Z/P/F

Command	Sub_Command		Parameters			Send Command	Respond
	Attribute	Description	Code	Zone(Z)			
Event	**Source**	Source Settings	11		0 : disable,1 : enable	Event/11/E	Event/11/Z1/Z2/Z3/Z4/Z5/Z6
		Source Names	12	0,1-6	0 : disable,1 : enable	Event/12/Z/E	Event/12/Z/S1N/S2N/S3N/S4N/EN/RN
	Status	Status Settings	21	0,1-6	0 : disable,1 : enable	Event/21/Z/E	Event/21/Z/BC/BB/AO/SP/EXT
	Sound	Sound Settings	31	0,1-6	0 : disable,1 : enable	Event/31/Z/E	Event/31/Z/V/B/M/L/3D/E100/E300/E1K/E3K/E10K
	Tuner	Tuner Settings	41	0,1-6	0 : disable,1 : enable	Event/41/Z/E	Event/41/Z/F/L/St/M/P/Sp/Se/E
		Tuner Preset Names	42	0,1-6	0 : disable,1 : enable	Event/42/Z/E	Event/42/Z/P1N/P2N/P3N/P4N/P5N/P6N/P7N/P8N

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SAMPLE COMMANDS

The following commands are examples of the control and status functions for the NS-MU5066.

Action	# Params	Parameter(s)	Description	Example String
ChangeSrc/	2	Z/S	Changes Zone Z to Source S	“ChangeSrc/1/2”
ChangeSrc/	2	Z/S	Turn ON all zones to source 3	“ChangeSrc/0/3”
ChangeVol/	2	Z/V	Changes Zone Z's volume. Volume immediately changes to volume V. NudgeVol described below can also be used to ramp volume.	“ChangeVol/1/11”
ChangeSrc/	2	Z/S	Turn OFF all zones	“ChangeSrc/0/0”
NudgeVol/	2	Z/D	Ramp zone Z's volume in direction D one step.	“NudgeVol/1/0”
ChangeBass/	2	Z/B	Changes Zone Z’s bass.	“ChangeBass/1/15”
ExePress/	2	S/C	Send pause button command to source 2	“ExePress/2/1”
NudgeBass/	2	Z/D	Ramp zone Z's bass in direction D one step.	“NudgeBass/1/0”
ChangeTreb/	2	Z/T	Change Zone Z's treble	“ChangeTreb/1/15”
ExeMenu/	2	Z/C	Launch Macro 1 from zone 2	“ExeMenu/2/4”
NudgeTreb/	2	Z/D	Ramp zone Z's treble in direction D one step.	“NudgeTreb/1/0”
ChangeMute/	2	Z/X	Change Zone Z's mute	“ChangeMute/1/0”
ExeMenu/	2	Z/C	Send menu command on zone 4	“ExeMenu/4/1
ExePress/	2	S/C	Execute source S’s registered command C. This is the equivalent function to pressing one of the keypad source transport buttons.	“ExePress/1/12”
ExeHold/	2	S/C	Execute source S’s registered command C.	“ExeHold/1/12”
AllOff	0		Turn off all zones	“AllOff”
ChangeBaCo/	2	Z/X	Changes Zone Z’s Backlight Color. (0=Green, 1=Amber)	“ChangeBaCo/1/0”
ExeMenu/	2	Z/C	Launch Macro 2 from zone 5	“ExeMenu/5/5”
ChangeDoor/	1	X	Doorbell mode 0=Off, 1=On	“ChangeDoor/0”
StatDoor	0	-	Status of Doorbell mode	“StatDoor”
ChangeBal/	2	Z/F	Changes Zone Z’s Balance	“ChangeBal/1/7”
StatVer/	1	Z	Sends ADC Firmware version	“StatVer/0”
NudgeBal/	2	Z/D	Ramp Zone Z's Balance in direction D one step.	“NudgeBal/1/0”
ChangePhone/	1	X	Phone mode 0=Off, 1=On	“ChangePhone/0”
StatPhone	0	-	Status of Phone mode	“StatPhone”
ChangeBaLi/	2	Z/L	Changes Zone Z’s Backlight Level (L). 0=off	“ChangeBaLi/1/0”
StatVer/	1	Z	Sends Zone 3 Keypad Firmware Version	“StatVer/3”
NudgeBaLi/	2	Z/D	Ramp Zone Z’s Backlight Level in direction D one step.	“NudgeBaLi/1/0”
ChangeSwOu/	1	X	Switched Outlet mode 0=Off, 1=On	“ChangeSwOu/0”
StatSwOu	0	X	Status of Switched Outlet	“StatSwOu”
ChangeStore/	2	S/N	Changes source name for source on all keypads.	“ChangeStore/1/12
ChangeLoud/	2	Z/U	Changes Zone z’s Loudness, Loudness immediately changes to Loud U.	“ChangeLoud/1/1”

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UNSOLICITED DATA COMMAND SET

1st	2rd	3th	Action	Parameter(s)	Example String
Event	Src	/	EventSrc/	E	EventSrc/1
	Store	/	EventStore/	Z/E	EventStore/3/1
	Press	/	EventPress/	E(0 or 1)	EventPress/1/1~24
	Data	/	EventData/	Z/E	EventData/2
	Tuner	/	EventTuner/	E	EventTuner/1
	StoreTuner	/	EventStoreTuner/	Z/E	EventStoreTuner/1/1

EXPLANATION: Subscribing to these commands will render unsolicited data which can be used to update status feedback on touch panels, software, or keypads.

- i. e. EventData/2/1 – this command subscribes you to Room #2 so that any data point that changes, such as volume, treble, bass, etc., is reported, at time of change, unsolicited.
- To unsubscribe to Room #2, in our example above, simply send an EventData/2/0 command.

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EVENTSTORE VALUES

Return value	Store name	Return value	Store name	Return value	Store name
1	CD*	19	REQUEST***	37	NPR
2	AUX	20	MOM	38	DSS**
3	TAPE	21	XM RADIO****	39	M-SERVER
4	TUNER	22	POP	40	DISH
5	TUNER2	23	R&B	41	(Null)*****
6	AM	24	RAP	42	EXTAUDIO******
7	FM	25	RADIO	43	MASTER
8	MP3	26	ROCK	44	BEDROOM
9	BLUES	27	SAT	45	KITCHEN
10	CHILDREN	28	SAT2	46	DINING
11	CLASSIC	29	SOUL	47	LIVING
12	COUNTRY	30	CD2	48	FAMILY
13	DAD	31	TALK	49	GREAT
14	DANCE	32	NEWS	50	STUDY
15	DVD	33	SIRIUS	51	OUTSIDE
16	LIGHTS	34	TRAFFIC	52	ROOM*******
17	INTERNET	35	WEATHER		
18	JAZZ	36	SPORTS		

*-Default Source 1 Name Value
**-Default Source 2 Name Value
***-Default Source 3 Name Value
****-Default Source 4 Name Value
*****-Default Tuner preset Value
******-Default EXT Input Value
*******-Default Room Name Value

For older series keypads Event Store values please refer to the 4602 or 4601 Integration Manuals.

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EVENTPRESS

EXPLANATION: The EventPress allows you to integrate button presses.

Returned value	10 Button ICON PRESS	10 Key
EventPress/S/**1**/Z	Pause	1
EventPress/S/**2**/Z	Stop	9
EventPress/S/**3**/Z	Play	2
EventPress/S/**4**/Z	Shuffle	3
EventPress/S/**6**/Z	Repeat	4
EventPress/S/**7**/Z	Prev <|	7
EventPress/S/**9**/Z	Next |>	8
EventPress/S/**10**/Z	Prev |<<	5
EventPress/S/**11**/Z	* Mode	0
EventPress/S/**12**/Z	Next >>|	6
EventPress/S/**13**/Z	10 Button HOLD 1	Pause
EventPress/S/**14**/Z	9	Stop
EventPress/S/**15**/Z	2	Play
EventPress/S/**16**/Z	3	Shuffle
EventPress/S/**18**/Z	4	Repeat
EventPress/S/**19**/Z	7	Prev <|
EventPress/S/**21**/Z	8	Next |>
EventPress/S/**22**/Z	5	Prev |<<
EventPress/S/**23**/Z	0	* Mode
EventPress/S/**24**/Z	6	Next >>|

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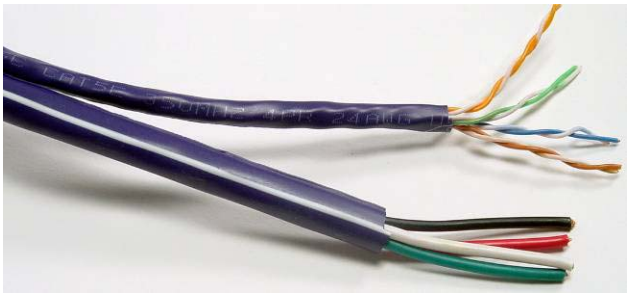
PRE-WIRING

Pre-wiring for *NetStreams* products is easy once the architecture is understood. Think of the devices below like computers in a sense or a device that needs a network connection and power.

1. *NS-MU5066KP25S*
2. *NS-MU5066KP25*
3. *NS-MU5066KP50*

These devices require power and data so it is recommended that a CAT5e and a 16/4 or 14/4 Siamese cable be run to them from the Audio/Video head end. These devices can be placed anywhere in the home as long as they have access to the network.



EIM devices such as the *Audio Port* or MU290 amplifier only require a CAT5e to be run from the *Keypad* device to the EIM devices. The MU290 has a loop through of the EIM bus. This will allow all products to be linked with one CAT5e in a local area.

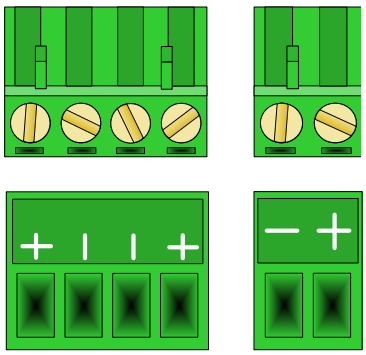
Terminating wires

Tools needed

a. RJ45 crimpers
b. CAT5 Stripper
c. Wire cutters/strippe
d. Small flat head scr

Parts needed

e. RJ45 connectors
f. Quick Connectors for power and speaker connections are provided.



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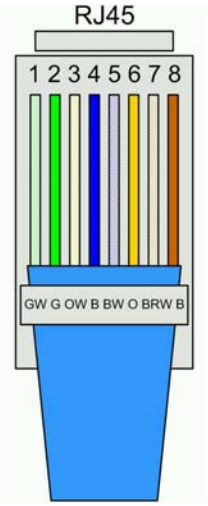
TERMINATE WIRES

How to Terminate Wires



Pin 1	Green/ White
Pin 2	Green
Pin 3	Orange/ White
Pin 4	Blue
Pin 5	Blue/ White
Pin 6	Orange
Pin 7	Brown/ White
Pin 8	Brown

TIA/EIA 568a

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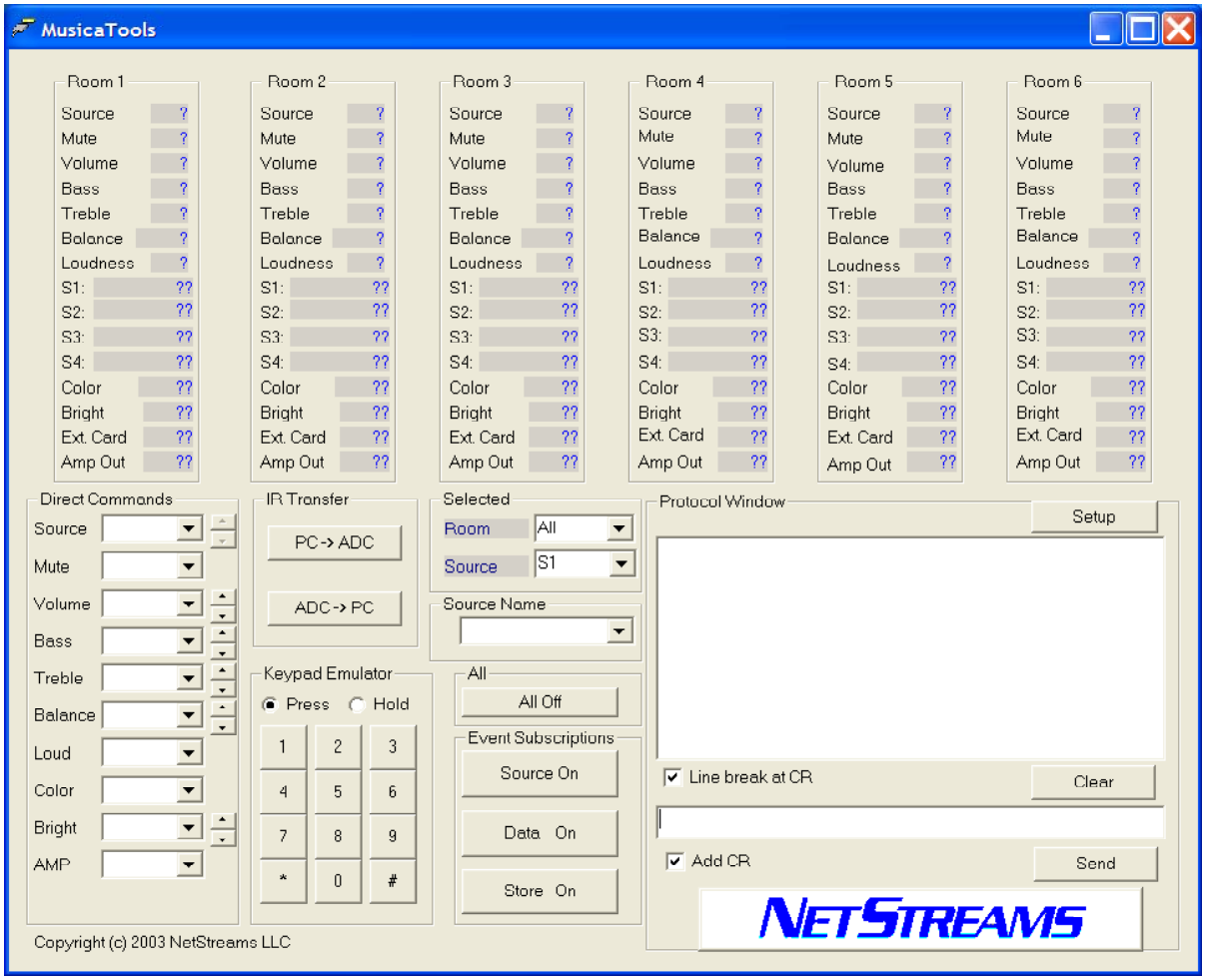
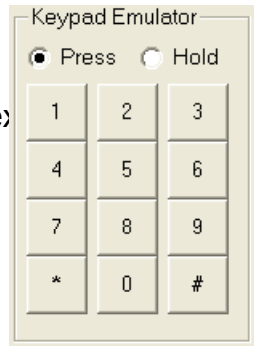
MUSICATOOLS

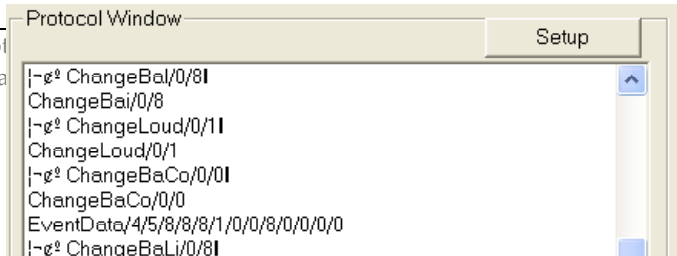


MusicaTools is a diagnostic program used to help in setting up and integrating with external controllers.



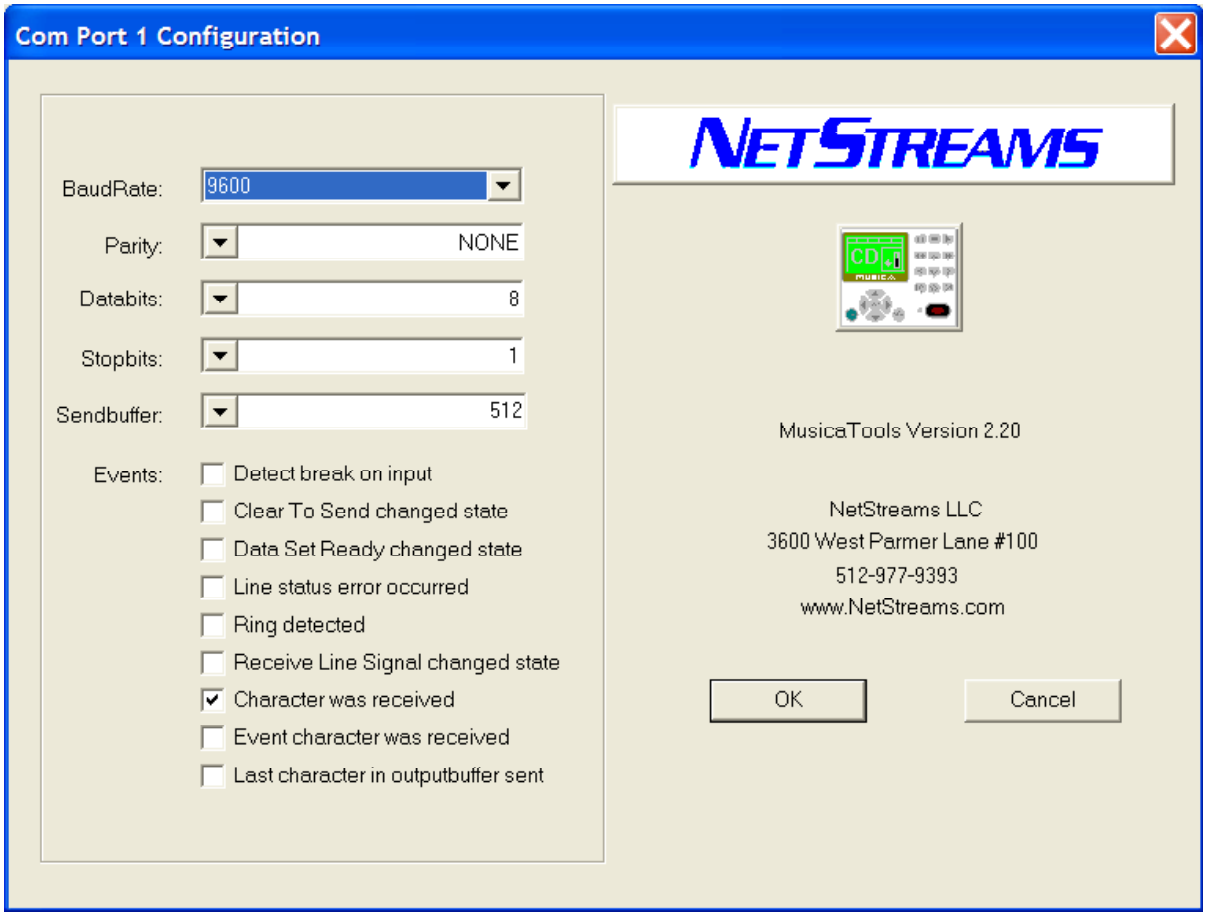
Keypad emulation

Allows any zone keypad button press or hold to be ex e computer.



Protocol Window

Displays messages sent to and received from the ADC. Command line allows manual entry of strings.



Com 1 Setup page.

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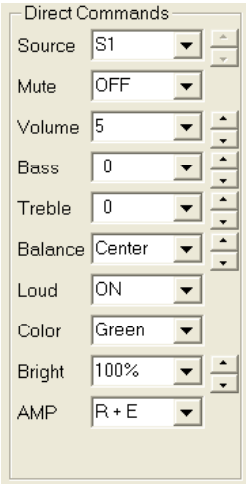
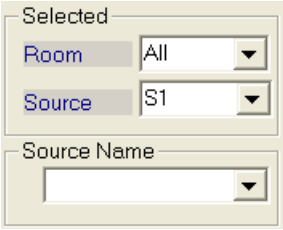


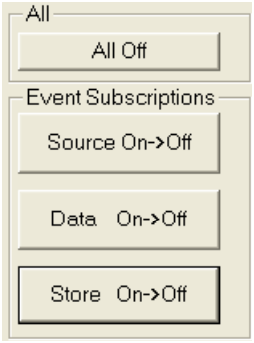
Direct Command Entry

Quick send commands



Select a room or all rooms and a source before issuing a

the room and source selection window.



All Off and Event Subscription Quick keys

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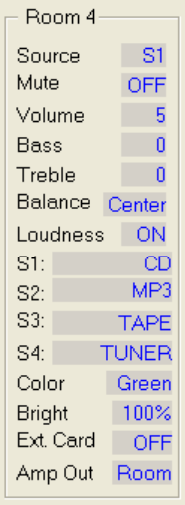
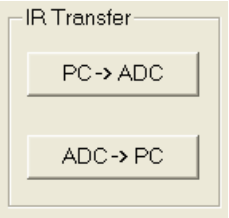
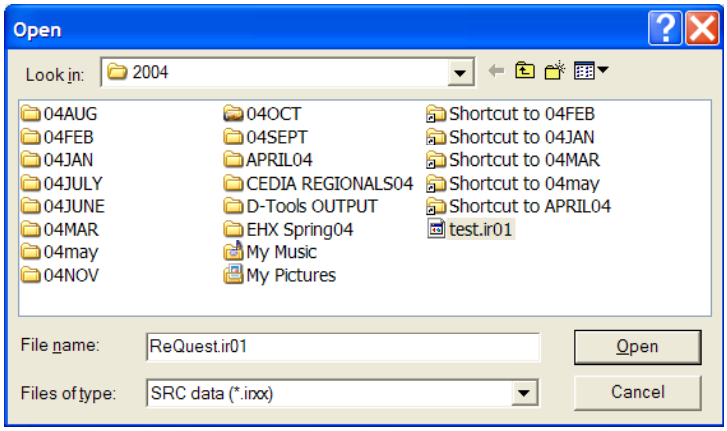


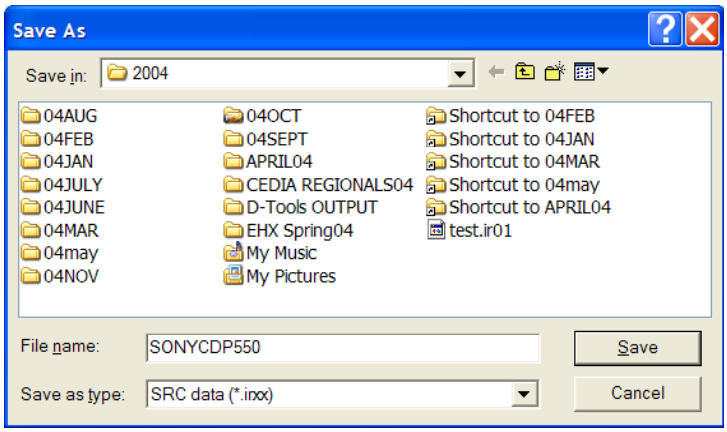
Real Time Zone Status Display

Current zone information

IR UPLOAD AND DOWNLOAD UTILITY







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